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PROGRAMME PLANNING

Country, intercountry and global programmes

GLOBAL HEALTH RESEARCH PROGRAMMES

Recommendation of the Administrator

Special Programme for Research and Training on Tropical Diseases (GLO/92/004)

Estimated UNDP contribution:	$15,000,000
Duration:	Five years
Executing agency:	World Health Organization (WHO)

I. BACKGROUND

1. Over 500 million people, 1 person in 10 on Earth, are suffering from tropical diseases. Estimated numbers of those infected by the major tropical diseases and at risk are: malaria - 270 million infected, with 2.1 billion people at risk; schistosomiasis - 200 million infected, with 600 million at risk; lymphatic filariasis - 90 million infected and more than 900 million at risk; onchocerciasis - 17 million infected and 90 million at risk; African sleeping sickness - 25,000 new cases a year and 50 million people at risk; Chagas disease - 16 to 18 million infected and 90 million at risk; leishmaniasis - 12 million infected and 350 million at risk; and leprosy - 10 to 12 million infected and 1.6 billion at risk. In some countries, notwithstanding the efforts that have been made, tropical diseases and especially malaria have continued to escalate to the extent that malaria is

once again one of the leading causes of morbidity. Malaria is increasing in several regions of the world because of changes in land use and because of the malaria parasites' increasing resistance to drugs and the malaria-carrying mosquitos' increasing resistance to insecticides. There is an increasing recognition of the problems related to malaria. There have been national, regional and global consultations to formulate relevant malaria operations. The ongoing and future work being carried out by the Special Programme for Research and Training in Tropical Diseases (TDR) is of particular relevance to country operations.

2. Fifteen years ago, the United Nations Development Programme (UNDP), the World Health Organization (WHO) and the World Bank joined forces in a unique venture in international technical cooperation: the TDR. The objective of TDR is to develop tools for the control of six major groups of tropical diseases: malaria, schistosomiasis, filariasis including onchocerciasis, leishmaniasis, the trypanosomiases (both African sleeping sickness and the American form, Chagas disease) and leprosy. While TDR pursues the basic research that will lead to vaccines and new drugs, it is also at work on the development of simple tests to diagnose these diseases, medicines that can cure them, tools for the the control of vectors that transmit them, and on the encouragement of human behaviour that will reduce their incidence. Research and testing are being carried out in all regions of the world under a working partnership between research institutions and scientists in the developing and industrialized countries. The TDR programme also works to strengthen the research capabilities of tropical countries in which these diseases are endemic.

3. To date, more than 80 products have been developed with TDR support, such as: new drugs against malaria, onchocerciasis (river blindness), African sleeping sickness and leprosy; diagnostic tool kits; vector-control tools such as insecticide-impregnated bednets for malaria; tsetse fly traps and screens for African sleeping sickness; fumigant canisters; insecticidal paints for Chagas disease; and vaccines against leprosy and leishmaniasis. Many TDR products are being used in national programmes. Increasingly, developing country institutes, scientists and other health personnel are participating in product development, clinical trials and field research to tailor them to the specific needs of their countries. Through its research-capability strengthening activities, TDR is making it possible for an increasing number of scientists in tropical countries to participate in this international research effort. More than 350 institutions have received research strengthening grants and 700 scientists have received TDR support for training over the first 15 years of TDR's existence. Through grants and "twinning" arrangements, TDR has created a flexible system of financial and technical support. The aim is to provide developing country scientists with the best possible research environment in which to apply their talents to the diseases affecting their communities. Research into the specifications, development and testing of new tools must increasingly take place in the countries where the diseases are endemic, to ensure that the tools are appropriate and effective when the diseases occur. Particular attention is being given to strengthen the institutional capacity of countries most affected by tropical

diseases, so as to enable them to conduct research relevant to the control of indigenous diseases.

4. Tropical diseases cause about half of the world's illness, but receive only about 3 per cent of its medical research funds. Furthermore, drug companies have been reluctant to bridge the gap because they doubt that research investments will be re-couped; these are diseases of the poor in poor countries. Progress therefore against tropical disease control has been hampered by inadequate funding, poverty and social and economic upheaval in many of the affected countries. The TDR programme, which represents a global partnership between public and private institutions, is thus a critical link for controlling major global killer diseases, and for promoting human development.

II. THE SPECIAL PROGRAMME

5. TDR's objectives for the next five years are as follows: (a) development and field application of drugs, diagnostic tests and biological vector-control techniques; (b) field assessment of candidate vaccines against leprosy, malaria, schistosomiasis and leishmaniasis; (c) establishment of the epidemiological, social and economic bases for the development of more effective national strategies for the control of the six diseases; (d) establishment of a network of 80 to 100 self-reliant national research and training centres, which will facilitate future research requirements; and (e) training a base of 300 to 400 scientists from tropical developing countries for research teaching and/or disease control careers in their home countries.

6. TDR's activities span a broad range from basic research on the target diseases, the parasites and vectors, to operational or health systems research aimed at learning how disease-control products can be utilized most effectively and efficiently. Between these two is product development, the process of transforming basic scientific knowledge into usable disease-control products, including pre-clinical and clinical evaluations of these products, to the stage of registration or other form of licensing for utilization. In the initial years of the programme, considerable emphasis was placed on basic research, to improve knowledge about fundamental aspects of the diseases, such as incidence, parasite metabolism and mechanisms of immunity, vector-life cycles and distribution and resistance of the disease organisms to drugs. From these efforts, as well as from general advances in biomedical research, came ideas for new vaccines, drugs, diagnostics and vector-control methods - TDR's "products". Many potential products supported by TDR are ready to move from primarily laboratory-based research to intensive development prior to large-scale trials in disease endemic countries. Product development is a high priority of the programme at the present time. TDR is involved in the development of more products than many medium-sized pharmaceutical companies. However, because of high cost and complexity of product development, TDR cannot undertake simultaneously the development of all or even most of the potential products which have been supported in the early stages. Clear

priorities must be made and the development of the selected high-priority products pursued on an urgent basis.

7. Malaria remains the most important of the TDR target diseases. In view of the spread of multidrug resistance, there is an urgency to develop a new generation of antimalarial drugs. Research will also continue on the development of malaria vaccines, improved diagnostic tests, vector-control methods such as insecticide-impregnated bednets and biological control, and other innovative control measures.

8. Research capability strengthening, including epidemiology and field research support, also continues to be a high priority of the programme. As a result, training activities will be more strongly emphasized. TDR is also pursuing assistance in the least developed countries where activities to date have been minimal. Field research, broadly defined to include research which involves the collection of primary data on individuals, their communities and/or their environments in developing countries, increases in importance as more disease-control products developed with TDR support require field trials in disease endemic areas or enter into disease-control use.

9. TDR plans to expand its support for research on the economic aspects of tropical diseases. The cost-effectiveness and social acceptability of tools for the control of TDR target diseases will be given priority. Techniques for stimulating greater community involvement in disease control will be developed and tested, including the relative effectiveness of involving groups such as teachers and students and different communication strategies for health education.

10. Since 1990, several studies have been funded on risk factors for women with respect to tropical diseases, as well as selected intervention studies. Policy recommendations to support special programmes for women for tropical disease prevention and control, as well as for their increased involvement in these activities will be made based on the findings of research currently under way.

11. The TDR programme was reviewed by an external review committee in 1988. The committee underlined the importance of national capacity-building efforts and product development and concluded that TDR was needed for at least another 10 years. A copy of the full external review is available upon request.

12. TDR's research and development and research capability strengthening and training activities are linked to other WHO programmes, especially the Division of Control of Tropical Diseases, the WHO/UNDP Programme for Vaccine Development, the Onchocerciasis Control Programme in West Africa, the Diarrhoeal and Acute Respiratory Disease Control Programmes, the Expanded Programme on Immunization, and the Global Programme on AIDS.

13. WHO is the executing agency for the TDR programme which has a scientific and technical advisory committee composed of outside scientists from both developed and developing countries. Management and financial matters are

reviewed three times a year by the co-sponsors of this programme: UNDP, WHO and the World Bank. In addition, the programme is reviewed during an annual meeting of TDR's Joint Coordinating Board composed of the co-sponsors and participants from developed and developing countries. As a co-sponsor of the programme, UNDP's participation helps to ensure that appropriate linkages are encouraged with relevant UNDP-supported country and regional initiatives and reflect priorities set by the Governing Council for the fifth cycle.

14. The proposed UNDP contribution is $15 million for five years. The total annual contribution from other donors is approximately $30 million. The UNDP contribution will be used for support to international and national research institutions and for collaboration with the public and private sectors.

III. RECOMMENDATION OF THE ADMINISTRATOR

15. The Administrator recommends that the Governing Council approve this project.